

**Abstract**

A honing machine for super finishing workpieces, e.g. by honing using a tool spindle (7), can be rotatably driven and can receive a tool. A motor rotates the tool spindle, the tool spindle (12) being arranged on a carriage (12), which can be displaced on a machine frame (16), by means of a drive device, in the direction of the rotational axis of the tool spindle. The drive device consists of a flat primary part (13) and a secondary part (17) of an electric linear motor (18), the secondary part being linearly displaceable along the primary part. One (13) of the components primary part/secondary part (13, 17) of the linear motor (18) is disposed on the machine frame (16), and the other (17) on the carriage (12).